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09/605,938	06/28/2000	Nobuyuki Bannai	862.C1938	5878

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EXAMINER

FOSTER, JUSTIN B

ART UNIT

PAPER NUMBER

2624

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8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/605,938

Applicant(s)

BANNAI, NOBUYUKI

Examiner

Justin Foster

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Image processing apparatus for color space conversion and compression of image data, and control method thereof.

2. The disclosure is objected to because of the following informalities: (1) line 7 of page 9 makes reference to numeral 201 of figure 2 as denoting a ten-key pad, however the figure shows a 12-key pad; (2) line 22 of page 12 states that the status of the start key is checked before step S504 of the flowchart of figure 5, however this step does not appear in said flow chart; (3) line 6 of page 28 refers to step S1007 and the examiner believes that it should read step S1107; (4) element S1708 of figure 17 is not defined.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 17-19 and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakamoto, *et al.* (5,719,686). With regard to claim 1, Sakamoto discloses an image processing apparatus comprising a color scanner unit, shown as element 1-10 of figure 6 and described in

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lines 58 through 63 of column 7, which is inherently a read means for reading an original image as a color image. The apparatus of Sakamoto further comprises a first output means for printing the image on a printing medium and outputting the image, shown as printer interface 1-11 of figure 6 and described in lines 64 of column 7 through 8 of column 8, a second output means for transmitting the image to a communication partner terminal via a facsimile, shown as network control unit 1-6 of figure 6 described in lines 49-50 of column 7, and a third output means for outputting the read image data to a connected information processing apparatus, shown as encode/decode unit 1-4 of figure 6, described in lines 55-57 of column 7. The Sakamoto apparatus further comprises a designation means for designating a transmission mode, which inherently sets the read mode, as described in lines 48-50 of column 5. The Sakamoto apparatus further comprises a color transformation means described in lines 38-40 of column 7. The Sakamoto apparatus further comprises a compression means described in lines 34-37 of column 7. The Sakamoto apparatus further comprises an inherent selection means for selecting an appropriate compression means in accordance with the selected read mode. Said selection means is shown as element 1-4 of figures 6 and 9 and the selection operation can be clearly seen in figure 9 where a selection is made between JPEG encoding and MH encoding.

5. With regard to claim 17, the Sakamoto apparatus includes a CPU for controlling the apparatus described in the preceding paragraph, as described in lines 22-23 of column 5, and this inherently constitutes a control means for said apparatus.

6. With regard to claim 18, the Sakamoto apparatus includes a CPU for controlling the apparatus, as described in lines 22-23 of column 5, that inherently constitutes a storage medium which stores program codes which perform the control method of the preceding paragraph.

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7. With regard to claim 19, Sakamoto discloses an image processing apparatus comprising a color scanner unit, shown as element 1-10 of figure 6 and described in lines 58 through 63 of column 7, which is inherently an input means for inputting color image data. The Sakamoto apparatus further comprises a transformation means for transforming a color space of the color image data input by said input means described in lines 38-40 of column 7. The Sakamoto apparatus further comprises a compression means for compressing the color image data described in lines 34-37 of column 7. The apparatus of Sakamoto further comprises an output means for outputting the color image data consisting of a first output means for printing the image on a printing medium and outputting the image, shown as printer interface 1-11 of figure 6 and described in lines 64 of column 7 through 8 of column 8, a second output means for transmitting the image to a communication partner terminal via a facsimile, shown as network control unit 1-6 of figure 6 described in lines 49-50 of column 7, and a third output means for outputting the read image data to a connected information processing apparatus, shown as encode/decode unit 1-4 of figure 6, described in lines 55-57 of column 7. The transformation means of the Sakamoto apparatus transforms the color image data input by said input means into color image data of a color space corresponding to an output destination of said output means as seen figure 9 where a selection is made between JPEG encoding and MH encoding and the color transformation is selected accordingly.

8. With regard to claim 21, Sakamoto discloses, in lines 60-66 of column 6, the encoding of color images during the copy mode, when the output is not a communication line, and the use of YCbCr color conversion and JPEG compression for said encoding means, described in lines 37-

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41 of column 7. This is inherently a color space that can be transformed more easily than Lab space.

9. With regard to claim 22, the Sakamoto apparatus includes a CPU for controlling the apparatus of paragraph 5 above, described in lines 22-23 of column 5, and this inherently performs the image processing method of said apparatus.

10. With regard to claim 23, the Sakamoto apparatus includes a CPU for controlling the apparatus, as described in lines 22-23 of column 5, that inherently constitutes a storage medium which stores program codes which control said apparatus.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 2, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Murai, *et al.* (6,005,673). With regard to claim 2, Sakamoto discloses, in lines 48-50 of column 5, the selection of a transmission mode, which inherently sets the read mode, between a color mode and a monochromatic mode where said monochromatic mode reads binary data as described in lines 58-61 of column 5. These two read modes correspond to the color and monochrome read modes of the application. Sakamoto does not disclose a gray scale read mode. Murai teaches the use of an image input read means comprising a monochrome scanner that obtains multi-valued image data in lines 18-20 of column 9. This read mode is

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inherently the gray scale read mode of the application since multi-valued images are being read. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sakamoto to include a gray scale read mode in addition to the disclosed color and monochrome read modes. This would allow additional flexibility in the type of image data that could be read and output.

13. With regard to claim 3, Sakamoto in view of Murai discloses the invention as stated in claim 2. Murai further teaches the color conversion to the $L^*a^*b^*$ or Lab space in lines 66 of column 6 through 5 of column 7 and the JPEG compression of image data in lines 6 through 12 of column 7 when the color mode is selected and the facsimile output is selected. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Lab color space conversion and JPEG compression when color mode and facsimile output is selected in order to follow the recommendation of the ITU-T.

14. With regard to claim 5, Sakamoto discloses the invention as stated in claim 1. Sakamoto further discloses, as stated in lines 39-48 of column 9 and shown in figure 9, that for monochrome mode no color space conversion is done and MH encoding, a type of run length coding, is used for compression. Sakamoto, however, does not teach the use of a gray scale read mode as stated in claim 2. Murai teaches the use of an image input read means comprising a monochrome scanner that obtains multi-valued image data in lines 18-20 of column 9. This read mode is inherently the gray scale read mode of the application since multi-valued images are being read. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sakamoto to include a gray scale read mode in addition to the

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disclosed color and monochrome read modes. This would allow additional flexibility in the type of image data that could be read and output.

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Murai in further view of Ito (6,144,763). Sakamoto in view of Murai discloses the invention as stated in claim 2. Ito further teaches the transformation of gray scale images (referred to by Ito as monochrome but containing multi-values) to a YCbCr color space, in lines 7-15 of column 5 and JPEG compression of said images in lines 3-6 of column 4. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use YCbCr color space conversion and JPEG compression in order to reduce the size of the compressed images in accordance with Ito's teaching that the Cr and Cb values can be fixed for gray scale images since said images contain only luminance and no chrominance values.

16. Claims 6-8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Murai in further view of Ogura (4,860,115). With regard to claim 6, Sakamoto in view of Murai discloses the invention as stated in claim 2. Ogura teaches a copier apparatus having means, as stated in lines 1-2 of column 5, for setting the desired number of output copies. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include means for setting the desired number of output copies so that the operator of the apparatus would be able to output any desired number of copies.

17. With regard to claim 7, Sakamoto in view of Murai discloses the invention as stated in claim 2. Sakamoto further discloses, in lines 30-35 of column 6, a direct copy mode for use with the color read mode. According to this embodiment, color images are read and output to the printer, which inherently functions as the 1st output means of application, with no color

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transformation or compression being performed. The only element not disclosed is the means for setting the number of output copies for a read of one page. Ogura teaches a copier apparatus having means, as stated in lines 1-2 of column 5, for setting the desired number of output copies. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include means for setting the desired number of output copies so that the operator of the apparatus would be able to output any desired number of copies.

18. With regard to claim 8, Sakamoto in view of Murai discloses the invention as stated in claim 2. Sakamoto further discloses, in lines 60-66 of column 6, a memory copy mode for use with the color read mode. According to this embodiment, color images are read and the read image data is encoded and stored in memory before being output to the printer, which inherently functions as the 1st output means of application. Sakamoto further teaches, in lines 37-41 of column 7, the encoding method for color images being that of color conversion to YCbCr and JPEG compression. The only element not disclosed is the means for setting the number of output copies for a read of one page. Ogura teaches a copier apparatus having means, as stated in lines 1-2 of column 5, for setting the desired number of output copies. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include means for setting the desired number of output copies so that the operator of the apparatus would be able to output any desired number of copies.

19. With regard to claim 12, Sakamoto in view of Murai teaches the invention as stated in claim 2. Sakamoto further discloses, in lines 16-22 of column 6, the use of memory copying for monochrome images. According to this embodiment, monochrome image data is encoded and stored in memory before being output to a printer, which inherently functions as the 1st output

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means of application. Sakamoto further teaches, as stated in lines 34-37 of column 9 and shown in figure 9, that for monochrome mode no color space conversion is done and MH encoding, a type of run length coding, is used for compression. The only element not disclosed is the means for setting the number of output copies for a read of one page. Ogura teaches a copier apparatus having means, as stated in lines 1-2 of column 5, for setting the desired number of output copies. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include means for setting the desired number of output copies so that the operator of the apparatus would be able to output any desired number of copies

20. Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Murai in further view of Ogura in further view of Sugiura, *et al.* (5,761,394). With regard to claim 9, Sakamoto in view of Murai in further view of Ogura discloses the invention as stated in claim 6. Sugiura further teaches a copy operation in which no color space conversion or compression is done. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use no color conversion or compression when the 1st output means was selected for one copy of a gray scale image. This would allow for the single page to be output quickly.

21. With regard to claim 11, Sakamoto in view of Murai in further view of Ogura discloses the invention as stated in claim 6. Sugiura further teaches a copy operation in which no color space conversion or compression is done. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use no color conversion or compression when the 1st output means was selected for one copy of a monochrome image. This would allow for the single page to be output quickly.

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22. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Murai in further view of Ogura in further view of Ito. Sakamoto in view of Murai further view of Ogura discloses the invention as stated in claim 6. Sakamoto in view of Murai does not teach the use of YCbCr color space and JPEG compression when the number of output copies is a plurality of copies, the read mode is gray scale and the first output means is to output the read image. Ito teaches the transformation of gray scale images (referred to by Ito as monochrome but containing multi-values) to a YCbCr color space, in lines 7-15 of column 5, and JPEG compression of said images in lines 3-6 of column 4. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use YCbCr color space conversion and JPEG compression in order to reduce the size of the compressed images in accordance with Ito's teaching that the Cr and Cb values can be fixed for gray scale images since said images contain only luminance and no chrominance values.

23. Claims 13, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Murai. With regard to claim 13, Sakamoto discloses the invention as stated in claim 1. Sakamoto further teaches the use of MH compression for monochrome mode and JPEG compression for color mode. This inherently implies a compression format designation means since multiple compression formats are possible. Sakamoto further teaches, in lines 48-50 of column 5, the selection of a transmission mode, which inherently sets the read mode, between a color mode and a monochromatic mode where said monochromatic mode reads binary data as described in lines 58-61 of column 5. These two read modes correspond to the color and monochrome read modes of the application. Sakamoto does not disclose a gray scale read mode. Murai teaches the use of an image input read means comprising a monochrome scanner that

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obtains multi-valued image data in lines 18-20 of column 9. This read mode is inherently the gray scale read mode of the application since multi-valued images are being read. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sakamoto to include a gray scale read mode in addition to the disclosed color and monochrome read modes. This would allow additional flexibility in the type of image data that could be read and output.

24. With regard to claim 15, Sakamoto in view of Murai discloses the invention as stated in claim 13. Murai further teaches, in lines 16-22 of column 7, the use of run length compression without color conversion for gray scale images. Neither Sakamoto nor Murai teach the use of run length compression and no color conversion for color images. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use no color space conversion when output to the image processing apparatus is selected for the gray scale read mode and run length compression is selected since color conversion would not help with run length compression of gray scale images.

25. With regard to claim 16, Sakamoto in view of Murai discloses the invention as stated in claim 13. Sakamoto further teaches, in lines 34-37 of column 7, the use of run length compression with no color space conversion for monochromatic images being output to the image processing apparatus, which inherently acts as the 3rd output means of application.

26. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Murai in further view of Ito. Sakamoto in view of Murai discloses the invention as stated in claim 13. Sakamoto further teaches, in lines 37-41 of column 7, the encoding method for color images of color conversion to YCbCr and JPEG compression when images are output

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to the image processing apparatus, which inherently acts as the 3rd output means of application. Ito further teaches the transformation of gray scale images to a YCbCr color space, in lines 7-15 of column 5, and JPEG compression of said images in lines 3-6 of column 4. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use YCbCr color space conversion when output to the image processing apparatus is selected for the gray scale read mode and JPEG compression is selected in order to reduce the size of the compressed images in accordance with Ito's teaching that the Cr and Cb values can be fixed for gray scale images since said images contain only luminance and no chrominance values.

27. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Murai. Sakamoto discloses the invention as stated in claim 19. Murai further teaches the transformation to $L^*a^*b^*$ or Lab color space for output to a communication line, see lines 65 of column 6 through 4 of column 7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Sakamoto to use the Lab color space transformation for output to a communication line. This would bring the apparatus into compliance with the standardized system as recommended by the ITU-T.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Foster whose telephone number is (703)305-1900. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on (703)308-7452. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703)308-5397 for regular communications and (703)308-5397 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

JF
July 25, 2003



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